

# PAH Exposure in Marine Fishes of Puget Sound and the Georgia Basin

*Sandra M. O'Neill, James West and Gina Ylitalo*

*Washington State Department of Fish and Wildlife*

## **Abstract**

We measured exposure to polycyclic aromatic hydrocarbons (PAHs) in several fish species to provide a broad overview of PAH contamination in the Puget Sound and Georgia Basin. Recent PAH exposure was estimated for adult populations of English sole (*Pleuronectes vetulus*), Pacific staghorn sculpin (*Leptocottus armatus*), demersal rockfish (*Sebastes spp.*) and Pacific herring (*Clupea pallasii*) by measuring fluorescing aromatic compounds (FACs) in bile at wavelengths appropriate for benzo[a]pyrene and phenanthrene. For benthic and demersal species, FAC concentrations generally tracked geographic trends in sediment concentrations, with highest exposures in fishes from urban bays in the central Puget Sound, followed by near- and non-urban locations. Within locations with similar degrees of urbanization, FAC concentrations were higher in benthic species than demersal rockfish, possibly because benthic species are more closely associated with PAH contaminated sediments. Pacific herring, a pelagic planktivore, were only sampled at near-and non-urban locations and had higher concentrations in the more urbanized location. These data confirm that measurement of biliary FACs is a useful tool to quantify spatial patterns in recent PAH exposure in marine fish. This type of data can be used to monitor temporal trends in PAH exposure and to assess resource damage in the event of an oil spill.